

Stem Cell Internships in Laboratory-based Learning (SCILL) continue to expand the scientific workforce for stem cells research and therapies .

Grant Award Details

Stem Cell Internships in Laboratory-based Learning (SCILL) continue to expand the scientific workforce for stem cells research and therapies .

Grant Type: Bridges

Grant Number: EDUC2-12677

Project Objective: This program provides a stem cell-focused Masters Degree program for up to 10 students per year at SJSU. During the first year of training, students obtain a foundational laboratory-based education, take courses in regulatory affairs and therapy development, and participate in patient engagement and outreach activities. During the second year, students participate in a human ESC workshop, followed by a 12-months research internship at a host laboratory.

Investigator:

Name:	Tzvia Abramson
Institution:	SJSU Research Foundation
Type:	PI

Award Value: \$3,606,500

Status: Active

Grant Application Details

Application Title: Stem Cell Internships in Laboratory-based Learning (SCILL) continue to expand the scientific workforce for stem cells research and therapies .

Public Abstract:

The San José State University Stem Cell Internships in Laboratory-based Learning (SJSU SCILL) is a consortium of scientists, faculty, and administrative leaders from Bay Area institutions who have made a commitment to training students at the graduate level for careers in stem cell biology. Graduates from this program will advance and accelerate stem cell therapies and increase community awareness about scientific and societal issues related to stem cells and regenerative medicine.

San José State University has partnered with Stanford University, the University of California, Santa Cruz, Senescence Dorian therapeutics, Amgen Inc, Notable Labs, and Tenaya Therapeutics, Soteria, and Neurona to provide students with the academic and practical laboratory experience that will prepare them for careers in stem cell research and development of novel therapies. More than 60 stem cell researchers in this SJSU SCILL consortium are committed to educating and training students for careers in stem cell biology.

The SJSU SCILL program is designed to be completed in two years. SJSU SCILL students will take graduate laboratory courses in immunology, molecular biology, flow cytometry, and stem cell biology, as well as courses in regulatory affairs, therapy development processes, and clinical trial management. Students will also engage in patient interaction activities in various medical settings and develop a community outreach plan to share their knowledge and their expertise in stem cell biology and regenerative medicine with their communities. Each SJSU SCILL trainee will complete 12 months of full-time hands-on research in human stem cells, progenitor cells, or gene therapy, at one of our research universities or translational research partners, involving stem cell product development. On the successful completion of the SJSU SCILL curriculum and internship, students are awarded a master's degree and are prepared for a career in stem cell biology.

The SJSU SCILL Program has a solid track record in training stem cell professionals at a graduate level, all from among California residents and representative of the diverse ethnicities of our state. More than 95% of our students have completed the two-year program. More than 90% are employed primarily in the state of California and about 50% of those are working in stem cell-related fields in academia, in the biotech industry, or have continued to higher advanced degrees. The current proposal has continuous strong institutional support as demonstrated by the matching funds to support the biology curriculum in stem cells education and provide faculty to support that as well as the CIRM Bridges program, and open the stem cells specialized classes to additional biology graduate students. Through funds provided by CIRM in this grant, we will continue to produce outstanding scientists who will accelerate stem cell therapies to patients with unmet needs in the state of California.

Statement of Benefit to California: The state of California is in urgent need of therapies for a variety of degenerative diseases. Developments in stem cell biology progressively provide such therapies. The process of translating research-based innovations into useful, proven patient therapies is complex, and requires professionals at various levels. In creating the California Institute for Regenerative Medicine (CIRM) the voters in California ascended to a leadership position in developing stem cells for therapeutic applications.

Through CIRM funding, the Stem Cell Internships in Laboratory-based Learning Program at San José State University (SJSU SCILL) continues to generate well-rounded professionals who will accelerate the development of stem cell therapies. We train California State University students who will provide the engine supporting California's stem cell research and industry. Students in the program complete a year of stem cell biology classes and laboratory-based courses followed by a year of full-time internship in leading labs in academia and biotech. We partner with premier institutions in the San Francisco Bay Area to train San Jose State University SCILL interns at one of the research university partners (Stanford University and UC Santa Cruz) and translational research at one of the corporate partners (Dorian Therapeutics, Tenaya Therapeutics, Notable Labs, and Amgen).

We also train our students to understand and communicate with the people in need of stem cell therapies by engaging them in inpatient care at degenerative disease clinics and institutes for translational medicine. Our students will also reach out to their communities to educate wide audiences about stem cell discipline and stem cells pathway to therapeutic applications. Furthermore, the SJSU SCILL Program provides young people of California from diverse backgrounds with a university master's degree in science and career opportunities in this expanding California industry.

The SJSU SCILL Program is now in its 11th year. One hundred and twenty Californian students will be graduating by the end of this funding cycle. The ethnicities of our students reflect on the demographics of Santa Clara county's diverse population. Through the SCILL program, 90% of these graduates now hold professional positions primarily in California, and more than 50% work in biotech companies that accelerate stem cell therapies. About 30% of the graduates work in academic labs advancing stem cell research. About 15% of SCILL graduates continued to Ph.D. programs or medical school and will further advance this field in the future.

The SJSU current proposal has strong institutional support as demonstrated by the matching funds. With CIRM support, SJSU SCILL will continue to provide high-level Californian professionals that will contribute to a more holistic approach to stem cell therapies. This program will build on our strength in scientific training to include a commitment to therapy development and community involvement.

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